



SEQUENCE LISTING

<110> Mitchell, Lloyd
Garcia-Blanco, Mariano M.
Puttaraju, Madaiah
Mansfield, Gary S.

<120> METHODS OF COMPOSITIONS FOR USE IN
SPLICEOSOME MEDIATED RNA TRANS-SPLICING

<130> A31304-BAE (072874.0156)

<140> 09/941,492

<141> 2001-08-29

<150> 09/838,858

<151> 2001-04-20

<150> 09/756,096

<151> 2001-01-08

<150> 09/158,863

<151> 1998-09-23

<150> 09/133,717

<151> 1998-08-13

<150> 09/087,233

<151> 1998-05-28

<150> 08/766,354

<151> 1996-12-13

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tccattcaaa aa 132

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<213> Corynebacterium diptheriae

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ggcgctgcag ggcgctgatg atgttggtg

29

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<211> 36

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 <213> *Corynebacterium diptheriae*

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<210> 23
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 <210> 24
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 <210> 25
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 accggaattc atgaagccag gtacaccagg 30

 <210> 26
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 <213> *Homo sapien*

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 <210> 27
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 <213> *Homo sapien*

 <400> 27
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 <210> 28
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 <220>
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 <400> 28
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 <210> 29
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 <220>

<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 29
ctgaggatcc tcttacctgt aaacgcccac actgac 36

<210> 30
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

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gcatggtaac cctgcagggc ggcttcgtct gggactgg 38

<210> 31
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 31
ctgaaagctt gttaacttat tatttttgac accagacc 38

<210> 32
<211> 47
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<213> Artificial Sequence

<220>
<223> Oligonucleotide primer complimentary to the
Escherichia coli lacZ gene

<400> 32
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<210> 33
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<223> Oligonucleotide primer complimentary to the beta
HCG6 gene (accession #X00266)

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gcatggatcc tccggagggc ccctgggcac cttccac 37

<210> 34
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
 <223> Oligonucleotide primer complimentary to the beta
 HCG6 gene (accession #X00266)

 <400> 34
 ctgactgcag ggtaaccgga caaggacact gcttcacc 38

 <210> 35
 <211> 35
 <212> DNA
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 <220>
 <223> Oligonucleotide primer complimentary to the beta
 HCG6 gene (accession #X00266)

 <400> 35
 gcatggtaac cctgcagggg ctgctgctgt tgctg 35

 <210> 36
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide primer complimentary to the beta
 HCG6 gene (accession #X00266)

 <400> 36
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 <210> 37
 <211> 22
 <212> DNA
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 <220>
 <223> Oligonucleotide primer complimentary to the
 Escherichia coli lacZ gene

 <400> 37
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 <210> 38
 <211> 21
 <212> DNA
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 <220>
 <223> Oligonucleotide primer complimentary to the
 Escherichia coli lacZ gene

 <400> 38
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 <210> 39
 <211> 20
 <212> DNA
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<220>
 <223> Oligonucleotide primer complimentary to the
 Escherichia coli lacZ gene

<400> 39
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<210> 40
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 <212> DNA
 <213> Homo sapien

<400> 40
 acctggggccc acccattatt aggtcattat ccgcggaaca ttata 45

<210> 41
 <211> 35
 <212> DNA
 <213> Homo sapien

<400> 41
 acctctgcag gtgaccctgc aggaaaaaaaa agaag 35

<210> 42
 <211> 30
 <212> DNA
 <213> Homo sapien

<400> 42
 acctctgcag acttcacttc taatgatgat 30

<210> 43
 <211> 51
 <212> DNA
 <213> Homo sapien

<400> 43
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<210> 44
 <211> 32
 <212> DNA
 <213> Homo sapien

<400> 44
 gacctctcga gggatttggg gaattatttg ag 32

<210> 45
 <211> 35
 <212> DNA
 <213> Homo sapien

<400> 45
 ctgacctgcg gccgctacag tggtgaatgt ggtgc 35

<210> 46
 <211> 35
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<213> Homo sapien
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 ctgacctgcg gccgccaac tatctgaatc atgtg 35
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 aactagaagg cacagtcgag g 21
 <210> 53
 <211> 24
 <212> DNA
 <213> Artificial Sequence
 <220>

<223> Trans-spliced product containing human chorionic gonadotropin gene 6 sequences and Corynebacterium diphtheriae toxin A sequence

<400> 53

gagatgttcc agggcgtgat gatg

24

<210> 54

<211> 127

<212> RNA

<213> Artificial Sequence

<220>

<223> PTM intramolecular base paired stem

<221> misc_feature

<222> (57)...(70)

<223> Loop comprising a combination of 14 nucleotides according to the specification

<400> 54

gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn 60
nnnnnnnnnn aucguuaacu aaauaaacuac uaacuggggug aacuucuguu uuuuucucga 120
gcugcag 127

<210> 55

<211> 127

<212> RNA

<213> Artificial Sequence

<220>

<223> PTM intramolecular base paired stem

<221> misc_feature

<222> (57)...(70)

<223> Loop comprising a combination of 14 nucleotides according to the specification

<400> 55

gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn 60
nnnnnnnnnn aucguuaacu aaauaaacuac uaacuggggug aacuucugua uuauucucga 120
gcugcag 127

<210> 56

<211> 127

<212> RNA

<213> Artificial Sequence

<220>

<223> PTM intramolecular base paired stem

<221> misc_feature

<222> (57)...(70)

<223> Loop comprising a combination of 14 nucleotides according to the specification

<400> 56

gcuagccugg gacaaggaca cugcuucacc cgguuaguag accacagccc ugagccnnnn 60
nnnnnnnnnn aucguuaacu aaauaaacuac uaacuggggug aaguucuguc cuugucucga 120

gcugcag 127

<210> 57

<211> 132

<212> DNA

<213> Artificial Sequence

<220>

<223> Trans-spliced product containing human chorionic gonadotropin gene 6 sequences and Corynebacterium diphtheriae toxin A sequences

<400> 57

caggggacgc accaaggatg gagatgttcc agggcgctga tgatgttggtt gattcttctt 60
aaatcttttg tgatggaaaa cttttcttcg taccacggga ctaaacctgg ttatgtagat 120
tccattcaaa aa 132

<210> 58

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial sequence derived from Escherichia coli lacZ gene

<400> 58

gaattcggta ccatgggg 18

<210> 59

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial sequence derived from Escherichia coli lacZ gene

<400> 59

cgtttacagg taagaggatc ctccggaggg ccc 33

<210> 60

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Artificial sequence derived from Escherichia coli lacZ gene

<400> 60

tggtgtcaaa aataataagt taacaagctt 30

<210> 61

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Trans-spliced product containing Escherichia coli
lacZ and human chorionic gonadotropin gene 6
sequences

<400> 61
cagcagcccc tgtaaacggg gatac

25

<210> 62
<211> 286
<212> DNA
<213> Artificial Sequence

<220>
<223> Trans-spliced product containing Escherichia coli
lacZ gene sequences

<400> 62
ggctttcgct acctggagag acgcgcccgc tgatcctttg cgaatacgcc cacgcgatgg 60
gtaacagtct tggcggtttc gctaaatact ggcaggcggt tcgtcagtat ccccgtttac 120
agggcggtct cgtctaataa tgggactggg tggatcagtc gctgattaaa tatgatgaaa 180
acgggcaacc cgtggtcggc ttacggcggt gattttggcg atacgccgaa cgatcgccag 240
ttctgtatga acggtctggt ctttgccgac cgcacgccgc atccag 286

<210> 63
<211> 196
<212> DNA
<213> Artificial Sequence

<220>
<223> Trans-spliced product containing Escherichia coli
lacZ gene sequences

<400> 63
ggctttcgct acctggagag acgcgcccgc tgatcctttg cgaatacgcc cacgcgatgg 60
gtaacagtct tggcggtttc gctaaatact ggcaggcggt tcgtcagtat ccccgtttac 120
aggggctgct gctgttgctg ctgctgagca tgggcgggac atgggcatcc aaggagccac 180
ttcggccacg gtgccc 196

<210> 64
<211> 500
<212> DNA
<213> Artificial Sequence

<220>
<223> Trans-spliced product comprising cystic fibrosis
transmembrane regulator-derived sequences and His
tag sequences

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aacgttgctc gagtactaac tggtagctct tctttttttt cctgcagact tcacttctaa 120
tgatgattat gggagaactg gagccttcag agggtaaaat taagcacagt ggaagaattt 180
cattctgttc tcagttttcc tggattatgc ctggcaccat taaagaaaat atcatctttg 240
gtgtttccta tgatgaatat agatacagaa gcgtcatcaa agcatgccaa ctagaagagc 300
atcatcatca tcatcattag gcggccgcca ctgtgctgga tatctgcaga attccaccac 360
actggactag tggatccgag ctcggtacca agcttaagt taaaccgctg atcagcctcg 420
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ctggaagggtg ccactcccac 500

<210> 65
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Splice junction sequence

<400> 65
atgttccagg gcgtgatgat

20

<210> 66
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Artificial sequence comprising sequences derived
from Escherichia coli lacZ gene

<400> 66
Asp Tyr Lys Asp Asp Lys
1 5

<210> 67
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial sequence comprising sequence derived
from Escherichia coli lacZ gene

<400> 67
ggagttgatc ccgtc

15

<210> 68
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Artificial sequence comprising sequences derived
from Escherichia coli lacZ gene

<400> 68
gcagtgtcct tgtgcggtta ccctgcaggg cggttc

37

<210> 69
<211> 120
<212> DNA
<213> Artificial Sequence

<220>
<223> PTM binding domain of PTM

<400> 69

gattcacttg ctccaattat catcctaagc agaagtgtat attcttattt gtaaagattc 60
tattaactca tttgattcaa aatatttaaa atacttcttg tttcatactc tgctatgcac 120

<210> 70
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Spacer sequence of PTM

<400> 70
aacattatta taacgttgct cgaa 24

<210> 71
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Branch point, pyrimidine tract and acceptor splice
site of PTM

<400> 71
tactaaactgg tacctcttct tttttttttg atatcctgca gggcggc 47

<210> 72
<211> 70
<212> DNA
<213> Artificial Sequence

<220>
<223> Donor site and spacer sequence of PTM

<400> 72
tgaacggtaa gtgttatcac cgatatgtgt ctaacctgat tcgggccttc gatacgctaa 60
gatccaccgg 70

<210> 73
<211> 260
<212> DNA
<213> Artificial Sequence

<220>
<223> Binding domain of spacer sequence

<400> 73
tcaaaaagtt ttcacataat ttcttacctc ttcttgaatt catgctttga tgacgcttct 60
gtatctatat tcatcattgg aaacaccaat gatttttctt taatggtgcc tggcataatc 120
ctggaaaact gataacacaa tgaaattctt ccaactgtgct taaaaaaacc ctcttgaatt 180
ctccatttct ccataatca tcattacaac tgaactctgg aaataaaacc catcattatt 240
aactcattat caaatcacgc 260

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<211> 22
<212> DNA
<213> Artificial Sequence

<220>
 <223> Oligonucleotide primer

 <400> 74
 cgctggaaaa acgagcttgt tg 22

 <210> 75
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 75
 actcagtgtg attccacctt ctc 23

 <210> 76
 <211> 36
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 76
 gacctctgca gacttcactt ctaatgatga ttatgg 36

 <210> 77
 <211> 33
 <212> DNA
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 <223> Oligonucleotide primer

 <400> 77
 ctaggatccc gttcttttgt tcttcactat taa 33

 <210> 78
 <211> 33
 <212> DNA
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 <220>
 <223> Oligonucleotide primer

 <400> 78
 ctagggttac cgaagtaaaa ccatacttat tag 33

 <210> 79
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide primer

 <400> 79

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<210> 80	
<211> 37	
<212> DNA	
<213> Artificial Sequence	
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<223> Oligonucleotide primer	
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ctgaaagctt gttaaccagc tcaccatggt ggggcag	37
<210> 81	
<211> 23	
<212> DNA	
<213> Artificial Sequence	
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<223> Binding domain of PTM molecule	
<400> 81	
acccatcatt attaggtcat tat	23
<210> 82	
<211> 22	
<212> DNA	
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<223> Oligonucleotide primer	
<400> 82	
gatcaaattct gtcgatacctt cc	22
<210> 83	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
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<223> Oligonucleotide primer	
<400> 83	
ctgatccacc cagtcccatt a	21
<210> 84	
<211> 22	
<212> DNA	
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<223> Oligonucleotide primer	
<400> 84	
gactgatcca cccagtccca ga	22
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<212> DNA
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<223> Random sequence inserted to replace 3' splice site

<221> misc_feature

<222> (7)...(30)

<223> spacer sequence, see SEQ ID NO: 70

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ccgcggnnnn nnnnnnnnnn nnnnnnnnnn gggttccggt accggcggct tc 52

<210> 86

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide primer

<400> 86

ttttatcccc gtttacaggg cggcttcgtc tgggactggg tggatcagtc gctgattaaa 60
tatgatgaaa a 71

<210> 87

<211> 66

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 87

tttggcgata cgccgaacga tcgccagttc tgtatgaacg gtctggtctt tgccgaccgc 60
acgccg 66

<210> 88

<211> 192

<212> DNA

<213> Artificial Sequence

<220>

<223> PTM sequence

<400> 88

acgagcttgc tcatgatgat catgggcgag ttagaaccaa gtgaaggcaa gatcaaacad 60
tccggccgca tcagcttttg cagccaattc agttggatca tgcccgttac catcaaggag 120
aacataatct tcggcgtagc ttacgacgag taccgctatc gtcggtgat taaggcctgt 180
cagttggagg ag 192

<210> 89

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Oligonucleotide

<400> 89
 gagcaggcaa gacgagcttg ctcac 25

 <210> 90
 <211> 28
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 90
 gagaacataa tcttcggcgt cagttacg 28

 <210> 91
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 91
 gtcagttgga ggaggacatc tccaagtttg 30

 <210> 92
 <211> 192
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PTM exon 10

 <400> 92
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 tccggccgca tcagcttttg cagccaattc agttggatca tgcccgggtac catcaaggag 120
 aacataatct tcggcgtcag ttacgacgag taccgctatc gtcggtgat taaggcctgt 180
 cagttggagg ag 192

 <210> 93
 <211> 27
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> PTM sequence

 <400> 93
 aaatatcatt ggtgtttctt atgatga 27

 <210> 94
 <211> 30
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Oligonucleotide

 <400> 94

ccaactagaa gaggacatct ccaagtttgc	30
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atgatcatgg gcgagttaga accaagtgag	30
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<223> Oligonucleotide	
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aaaatatcat ctttggtggt tcctatg	27
<210> 97	
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<223> Oligonucleotide	
<400> 97	
ccaactagaa gaggacatct ccaagtt	27
<210> 98	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
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<223> 5' Splice site	
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cgtttacagg taagtggatc c	21
<210> 99	
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<212> DNA	
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<220>	
<223> 3' Splice site	
<400> 99	
ctgcagggcg gcttcgtcta ataattgg	27
<210> 100	
<211> 47	

<212> DNA
<213> Artificial Sequence

<220>
<223> Sequence from trans-splicing domain

<400> 100
tactaactgg tacctcttct tttttttttg atatcctgca gggcggc 47

<210> 101
<211> 1584
<212> DNA
<213> Artificial Sequence

<220>
<223> CFTR PTM

<400> 101
atgcagaggt cgcctctgga aaaggccagc gttgtctcca aacttttttt cagctggacc 60
agaccaattt tgaggaaagg atacagacag cgcctggaat tgcagacat ataccaaatc 120
ccctctgttg attctgctga caatctatct gaaaaatttg aaagagaatg ggatagagag 180
ctggcttcaa agaaaaatcc taaactcatt aatgcccttc ggcgatgttt tttctggaga 240
tttatgttct atggaatctt tttatattta ggggaagtca ccaaagcagt acagcctctc 300
ttactgggaa gaatcatagc ttcctatgac ccggataaca aggaggaacg ctctatcgcg 360
atztatctag gcataggcct atgccttctc tttattgtga ggacactgct cctacaccca 420
gccatttttg gccttcatca cattggaatg cagatgagaa tagctatgtt tagtttgatt 480
tataagaaga ctttaaaagct gtcaagccgt gttctagata aaataagtat tggacaactt 540
gttagtctcc tttccaacaa cctgaacaaa tttgatgaag gacttgcatg ggcacatttc 600
gtgtggatcg ctccctttgca agtggcactc ctcatggggc taatctggga gttgttacag 660
gcgtctgcct tctgtggact tggtttcctg atagtccttg ccctttttca ggctgggcta 720
gggagaatga tgatgaagta cagagatcag agagctggga agatcagtga aagacttgtg 780
attacctcag aaatgatcga gaacatccaa tctgttaagg catactgctg ggaagaagca 840
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tatgtgagat acttcaatag ctacgccttc ttcttctcag ggttctttgt ggtgttttta 960
tctgtgcttc cctatgcact aatcaaagga atcatcctcc ggaaaatatt caccaccatc 1020
tcattctgca ttgttctgcg catggcggtc actcggcaat ttccctgggc tgtacaaaca 1080
tggtatgact ctcttgagc aataaacaaa atacaggatt tcttacaaaa gcaagaatat 1140
aagacattgg aatataactt aacgactaca gaagtagtga tggagaatgt aacagccttc 1200
tgggaggagg gatttgggga attatttgag aaagcaaaac aaaacaataa caatagaaaa 1260
acttctaagt gtgatgacag cctcttcttc agtaatttct cacttcttgg tactcctgtc 1320
ctgaaagata ttaatttcaa gatagaaaga ggacagttgt tggcggttgc tggatccact 1380
ggagcaggca agacgagctt gctcatgatg atcatgggag agttagaacc aagtgaaggc 1440
aagatcaaac attccggccg catcagcttt tgcagccaat tcagttggat catgcccggt 1500
accatcaagg agaacataat cttcggcgtc agttacgacg agtaccgcta tcgctcgggtg 1560
attaaggcct gtcagttgga ggag 1584

<210> 102
<211> 323
<212> DNA
<213> Artificial Sequence

<220>
<223> Trans-splicing domain of CFTR PTM

<400> 102
gtaagatata accgatatgt gtctaacctg attcgggcct tcgatacgtc aagatccacc 60
ggtcaaaaaag ttttcacata atttcttacc tcttcttgaa ttcattgctt gatgacgctt 120
ctgtatctat attcatcatt ggaaacacca atgatatttt cttaaatggt gcctggcata 180
atcctggaaa actgataaca caatgaaatt cttccactgt gcttaatttt accctctgaa 240

ttctccattt	ctcccataat	catcattaca	actgaactct	ggaaataaaa	cccatcatta	300
ttaactcatt	atcaaatac	gct				323

<210> 103
 <211> 165
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> PTM Binding domain

<400> 103						
gctagcaata	atgacgaagc	cgcccctcac	gctcaggatt	cacttgccctc	caattatcat	60
cctaagcaga	agtgtatatt	cttattttgta	aagattctat	taactcattt	gattcaaaaat	120
atttaaaata	cttctgtgtt	cacctactct	gctatgcacc	cgcg		165

<210> 104
 <211> 225
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Trans-splicing domain of CFTR PTM

<400> 104						
aataatgacg	aagccgcccc	tcacgctcag	gattcacttg	ccctccaatt	atcatcctaa	60
gcagaagtgt	atatttctt	ttgtaaagat	tctattaact	catttgattc	aaaatatttta	120
aaatacttcc	tgtttcacct	actctgctat	gcacccgcgg	aacattatta	taacgttgct	180
cgaataactaa	ctggtacctc	ttctttttt	tttgatatcc	tgca		225

<210> 105
 <211> 3069
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> CFTR PTM sequence

<400> 105						
acttcacttc	taatgatgat	tatgggagaa	ctggagcctt	cagagggtaa	aattaagcac	60
agtggaagaa	tttcattctg	ttctcagttt	tcttggtatta	tgccctggcac	cattaaagaa	120
aatatcatct	ttggtgtttc	ctatgatgaa	tatagataca	gaagcgtcat	caaagcatgc	180
caactagaag	aggacatctc	caagtttgca	gagaaagaca	atatagttct	tggaagaagt	240
ggaatcacac	tgagtggagg	tcaacgagca	agaatttctt	tagcaagagc	agtatacaaa	300
gatgctgatt	tgtattttatt	agactctcct	tttgataacc	tagatgtttt	aacagaaaaa	360
gaaatatttg	aaagctgtgt	ctgtaaaactg	atggctaaca	aaactaggat	tttggtcact	420
tctaaaatgg	aacattttaa	gaaagctgac	aaaatattaa	ttttgcatga	aggtagcagc	480
tattttttatg	ggacattttc	agaactccaa	aatctacagc	cagacttttag	ctcaaaactc	540
atgggatgtg	attctttcga	ccaatttagt	gcagaaagaa	gaaattcaat	cctaactgag	600
accttacacc	gtttctcatt	agaaggagat	gctcctgtct	cctggacaga	aacaaaaaaa	660
caatctttta	aacagactgg	agagtttggg	gaaaaaagga	agaattctat	tctcaatcca	720
atcaactcta	tacgaaaatt	ttccattgtg	caaaagactc	ccttacaaat	gaatggcatc	780
gaagaggatt	ctgatgagcc	tttagagaga	aggctgtcct	tagtaccaga	ttctgagcag	840
ggagaggcga	tactgcctcg	catcagcgtg	atcagcactg	gccccacgct	tcaggcacga	900
aggaggcagt	ctgtcctgaa	cctgatgaca	cactcagtta	accaaggtca	gaacattcac	960
cgaagagaca	cagcatccac	acgaaaagtg	tcactggccc	ctcaggcaaa	cttgactgaa	1020
ctggatatat	attcaagaag	gttatctcaa	gaaactggct	tggaaaataag	tgaagaaatt	1080
aacgaagaag	acttaaagga	gtgctttttt	gatgatattg	agagcatacc	agcagtgact	1140
acatggaaca	cataccttcg	atatattact	gtccacaaga	gcttaatttt	tgtgctaatt	1200

tggtgcttag	taatttttct	ggcagaggtg	gctgcttctt	tggttgctgct	gtggctcctt	1260
ggaaacactc	ctcttcaaga	caaagggaat	agtactcata	gtagaaataa	cagctatgca	1320
gtgattatca	ccagcaccag	ttcgtattat	gtgttttaca	tttacgtggg	agtagccgac	1380
actttgcttg	ctatgggatt	cttcagaggt	ctaccactgg	tgcatactct	aatcacagtg	1440
tcgaaaattt	tacaccacaa	aatgtttacat	tctgttcttc	aagcacctat	gtcaaccctc	1500
aacacgttga	aagcaggtgg	gattcttaat	agattctcca	aagatatagc	aattttggat	1560
gaccttctgc	ctcttaccat	atctgacttc	atccagttgt	tattaattgt	gattggagct	1620
atagcagttg	tcgcagtttt	acaaccctac	atctttgttg	caacagtgcc	agtgatagtg	1680
gcttttatta	tggtgagagc	atatttcctc	caaacctcac	agcaactcaa	acaactggaa	1740
tctgaaggca	ggagtccaat	tttcaactcat	cttgttacaa	gcttaaaaagg	actatggaca	1800
cttcgtgcct	tcggacggca	gccttacttt	gaaactctgt	tccacaaaagc	tctgaattta	1860
catactgcc	actggttctt	gtacctgtca	acactgcgct	ggttccaaat	gagaatagaa	1920
atgatttttg	tcactcttctt	cattgctgtt	accttcattt	ccatttttaac	aacaggagaa	1980
ggagaaggaa	gagttgggtat	tatcctgact	ttagccatga	atatcatgag	tacattgcag	2040
tgggctgtaa	actccagcat	agatgtggat	agcttgatgc	gatctgtgag	ccgagtcctt	2100
aagttcattg	acatgccaac	agaaggtaaa	cctaccaagt	caaccaaacc	atacaagaat	2160
ggccaactct	cgaaagtatt	gattattgag	aattcacacg	tgaagaaaga	tgacatctgg	2220
ccctcagggg	gccaaatgac	tgtcaaagat	ctcacagcaa	aatacacaga	aggtggaaat	2280
gccatattag	agaacatttc	cttctcaata	agtcttgccc	agaggggtggg	cctcttggga	2340
agaactggat	cagggaagag	tactttgtta	tcagcttttt	tgagactact	gaacactgaa	2400
ggagaaatcc	agatcgatgg	tgtgtcttgg	gattcaataa	ctttgcaaca	gtggaggaaa	2460
gcctttggag	tgataccaca	gaaagtattt	attttttctg	gaacatttag	aaaaaaacttg	2520
gatccctatg	aacagtggag	tgatcaagaa	atatggaaag	ttgcagatga	ggttgggctc	2580
agatctgtga	tagaacagtt	tcctgggaag	cttgactttg	tccttgtgga	tgggggctgt	2640
gtcctaagcc	atggccacaa	gcagttgatg	tgcttggcta	gatctgttct	cagtaaggcg	2700
aagatcttgc	tgcttgatga	acccagtgct	catttggatc	cagtaacata	ccaaataatt	2760
agaagaactc	taaaacaagc	atctgctgat	tgcacagtaa	ttctctgtga	acacaggata	2820
gaagcaatgc	tggaatgcca	acaatttttg	gtcatagaag	agaacaaaagt	gcggcagtac	2880
gattccatcc	agaaaactgct	gaacgagagg	agcctcttcc	ggcaagccat	cagccctctc	2940
gacagggtga	agctctttcc	ccaccggaac	tcaagcaagt	gcaagtctaa	gccccagatt	3000
gctgctctga	aagaggagac	agaagaagag	gtgcaagata	caaggcttca	tcattcatcat	3060
catcattag						3069

<210> 106

<211> 131

<212> DNA

<213> Artificial Sequence

<220>

<223> Binding domain of mouse factor VIII PTM

<400> 106

ctcgagctta	cctgaactaa	tttttttagaa	tattaaaatc	ctaagctttt	atatctctat	60
ccctctatct	tttgctctct	atccaatttt	tattaaactta	gactttaaaa	agaaaacttat	120
gagaaaaatt	t					131

<210> 107

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Spacer sequence of PTM

<400> 107

ccgcggaaca	ttattataac	gttgctcgaa	tactaaactgg	tacctcttct	tttttttttg	60
atatacctga	g					71

<210> 108

<211> 527
<212> DNA
<213> Artificial Sequence

<220>
<223> Chicken beta actin promoter sequences

<400> 108
ccatggtcga cgtagcccc acgttctgct tcactctccc catctcccc ccctccccac 60
ccccaatttt gtatttattt attttttaat tattttgtgc agcgatgggg gcgggggggg 120
ggggggggcg gcgcccaggc ggggcggggc ggggcgagg gcggggcggg gcgaggcgga 180
gaggtgcggc ggagccaat cagagcggcg cgctccgaaa gtccctttta tcgagaggcg 240
gcggcgggcg cgccctata aaaagcgaag cgcgcgggcg ccgggagtcg ctgcgacgct 300
gccttcgccc cgtgcccaacc tccgcctcga gcttacctga actaattttt tagaatatta 360
aaatcctaag cttttatact cctatccctc tatcttttgc tctctatcca atttttatta 420
acttagactt taaaaagaaa cttatgagaa aaatttccgc ggaacattat tataacgttg 480
ctcgaatact aactggtacc tcttcttttt tttttgatat cctgcag 527

<210> 109
<211> 169
<212> DNA
<213> Artificial Sequence

<220>
<223> Sequence not included in construct

<400> 109
cgccgctcgc cgccgcccgc cccggctctg actgaccgcg ttactccac aggtgagcgg 60
gcgggacggc ccttctctc cgggctgtaa ttagcgcttg gtttaatcac ggcttgtttc 120
tttctgtgg ctgcgtgaaa gccttgagg gctccgggag gaattcgta 169

<210> 110
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> F8 PTM sequences

<400> 110
ggagtcgctg cgacgctgcc ttcgccccgt gccaacctcc gc 42

<210> 111
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> F8 PTM sequences

<400> 111
ctcgagcacc gatatcgtaa ct 22

<210> 112
<211> 53
<212> DNA
<213> Artificial Sequence

<220>

<223> Exon 26, Flag tag, stop sequences of mouse factor
VIII PTM

<400> 112
gaggcccagc agcaatacga ctacaaggac gacgatgaca agtgagttta aac 53

<210> 113
<211> 71
<212> DNA
<213> Artificial Sequence

<220>
<223> Spacer sequences of human or canine factor VIII
PTM

<400> 113
ccgcggaaca ttattataac gttgctcgaa tactaactgg tacctcttct tttttttttg 60
atatcctgca g 71

<210> 114
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Branch point and polypyrimidine tract sequences of
human papilloma virus PTM

<400> 114
tactaactgg tacctcttct tttttttttg atatcctgca gggcggc 47

<210> 115
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Branch point and polypyrimidine tract of human
papilloma virus PTM

<400> 115
tactaactgg tacctcttct tttttttttg atatcctgca gggcggc 47

<210> 116
<211> 80
<212> DNA
<213> Artificial Sequence

<220>
<223> Binding domain of human papilloma virus PTM

<400> 116
cagttaatac acctaattaa caaatcacac aacgctttgt tgtattgctg ttctaattgt 60
gttccataca cactataaca 80

<210> 117
<211> 149
<212> DNA
<213> Artificial Sequence

<220>
 <223> Binding domain of human papilloma virus PTM

 <400> 117
 cagttaatac acctaattaa caaatcacac aacgccttgt tgtattgctg ttctaattgtt 60
 gttccataca cactataaca ataatgtcta tactcactaa ttttagaata aaacttttaa 120
 catttatcac atacagcata tcgattccc 149

 <210> 118
 <211> 35
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Binding domain of human papilloma virus PTM

 <400> 118
 gatgatctgc aacaagacat acatcgaccg gtcca 35

 <210> 119
 <211> 104
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Binding domain of human papilloma virus PTM

 <400> 119
 cttcaggaca cagtggcttt tgacagttaa tacacctaat taacaaatca cacaacggtt 60
 tgttgatttg cagttctatg ttgttccata cacactataa caat 104

 <210> 120
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Binding domain of human papilloma virus PTM

 <400> 120
 gatgatctgc aacaagac 18

 <210> 121
 <211> 99
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Binding domain of human papilloma virus PTM

 <400> 121
 gacacagtgg cttttgacag ttaatacacc taattaacaa atcacacaac gggtttgttgt 60
 attgcagttc taatgttgtt ccatacacac tataacaat 99

 <210> 122
 <211> 138
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Binding domain of human papilloma virus PTM

<400> 122

```
gatgatctgc aacaagacat acatcgaccg gtccacttca ggacacagtg gcttttgaca 60
gttaatagac ctaattaaca aatcacacaa cggtttggtg tattgcagtt ctaatgttgt 120
tccatacaca ctataaca                                     138
```

<210> 123

<211> 89

<212> DNA

<213> Artificial Sequence

<220>

<223> Binding domain of human papilloma virus PTM

<400> 123

```
gatgatctgc aacaagacga cacagtggct tttgacagtt aatacaccta attaacaaat 60
cacacaacgg tttgttgtat tgcagttct                                     89
```

<210> 124

<211> 66

<212> DNA

<213> Artificial Sequence

<220>

<223> Trans-spliced product

<400> 124

```
agaatgtgtg tactgcaagc aacagttact gcgacgtgag ggcggcttcg tctgggactg 60
ggtgga                                             66
```

<210> 125

<211> 71

<212> DNA

<213> Artificial Sequence

<220>

<223> Trans-spliced product

<400> 125

```
gtgtactgca agcaacagtt actgcgacgt gagggcggct tcgtctggga ctgggtggat 60
cagtcgctga t                                             71
```

<210> 126

<211> 500

<212> DNA

<213> Artificial Sequence

<220>

<223> Reverse complement of trans-spliced product comprising cystic fibrosis transmembrane regulator-derived sequences and His tag sequences

<400> 126

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gtgggagtgg caccttccag ggtcaaggaa ggcacggggg aggggcaaac aacagatggc 60
tggcaactag aaggcacagt cgaggctgat cagcggttta aacttaagct tggtagcgag 120
ctcggatcca ctagtccagt gtggtggaat tctgcagata tccagcacag tggcggccgc 180
```

```

ctaattgatga tgatgatgat gctcttcttag ttggcatgct ttgatgacgc ttctgtatct 240
atattcatca taggaaacac caaagatgat attttcttta atggtgccag gcataatcca 300
ggaaaactga gaacagaatg aaattcttcc actgtgctta attttaccct ctgaaggctc 360
cagttctccc ataatcatca ttagaagtga agtctgcagg aaaaaaaga agaggtacca 420
gttagtactc gagcaacgtt ataataatgt tccgcggata atgacctaat aatgatgggt 480
gggcccgttt aaacgctagc                                     500

```

<210> 127

<211> 12

<212> DNA

<213> Artificial Sequence

<220>

<223> 3'end of trans-spliced product comprising cystic fibrosis
transmembrane regulator-derived sequences and His
tag sequences

<400> 127

gctagcgttt aa

12

<210> 128

<211> 12

<212> DNA

<213> Artificial Sequence

<220>

<223> 5'end of trans-spliced product comprising cystic fibrosis
transmembrane regulator-derived sequences and His
tag sequences

<400> 128

tgccactccc ac

12